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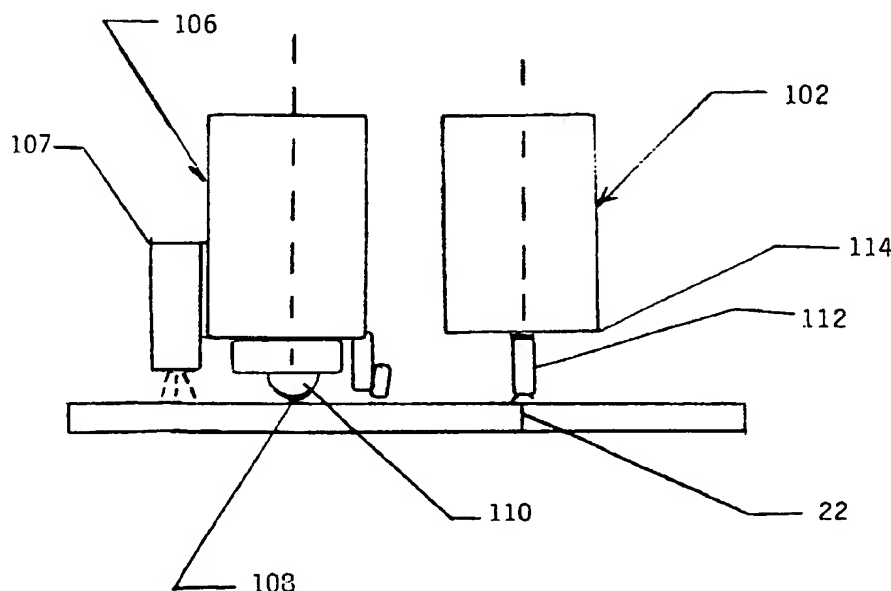
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(57) Abstract: The method and apparatus for performing the method of forming a weld joint of the present invention utilizes welding apparatus (100) having welded tool (102) and a compression tool (106) for inducing a layer of residual compressive stress along the surface of the weld line (18) and any heat affected regions with a controlled amount of cold working and surface hardening. In a preferred embodiment of the invention the compression tool (106) utilizes a single-point burnishing process to provide deep compression within the weld joint (20) with a minimal amount of cold working and surface hardening.

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